

**IN THE CLAIMS:**

Please cancel claims 1, 7, 9, 13, 17 and 20 without prejudice, and amend the claims and add new claims as follows:

1. (canceled)
2. (canceled)
3. (currently amended) The method of claim 6 ~~1~~, further comprising:  
receiving input from a device representing an adjustment to at least one of the 3D site model, sensory parameters, and view point for viewing said at least one sensory device, and rendering a subsequent image derived for said view point and of at least part of said coverage of said sensory device based on said adjustment or on values changed thereby.
4. (currently amended) The method of claim 6 ~~1~~, wherein said at least one sensory device is associated with sensor parameters that define relative to said 3D site model characteristics modeling a sensor selected from the group consisting of a camera, a motion sensor, an ultrasonic sensor, and an infrared sensor.
5. (currently amended) The method of claim 6 ~~1~~, wherein said positioning occurs automatically in accordance with at least one of a minimization of an occluded area, a maximization of the coverage, and said sensory parameters.

6. (currently amended) A method for dynamic sensor placement comprising:  
positioning at least one sensory device in a scene of a 3D site model supported in a  
computer;  
said 3D site model including data defining a plurality of surfaces in three  
dimensions making up a plurality of objects in the site model;  
rendering in said computer an image of at least part of said scene of the 3D site  
model in which at least part of a coverage of said at least one sensory device within the  
scene of said 3D site model is displayed, and part of the scene of the 3D site model outside  
said coverage is displayed, said coverage being derived in accordance with sensor  
parameters associated with said at least one sensory device; and  
said rendering of said image being derived for a view point in said 3D site model  
that is different from the positioning of said sensory device; and  
wherein said rendering step renders the coverage of said sensor in accordance with  
said sensor parameters such that surfaces in the 3D site model in said image have a  
texture that differentiates the coverage from the part of the scene that is not in said  
coverage;  
said surfaces in said image being disposed in the site model at a plurality of  
different respective three dimensional orientations; and

~~The method of claim 1,~~

wherein, when one of the surfaces or objects of the 3D site model is positioned so as to be an occlusion between an occluded area that absent the occlusion is in the coverage covered by said at least one sensory device, said image is rendered so that the occluded area has a texture that differentiates from surfaces in the coverage of the sensory device.

7. (canceled)
8. (canceled)
9. (currently amended) The method of claim 12 7, and further comprising:  
selecting a viewpoint for viewing said scene and using said viewpoint as the point of  
view in rendering said scene.
10. (currently amended) The method of claim 12 7, and further comprising:  
providing a graphical user interface for each of said selecting steps.
11. (currently amended) The method of claim 12 7, wherein said rendering step further  
comprises:  
positioning automatically said sensor in accordance with at least one of one of a  
minimization of an occluded area, a maximization of the coverage area, and a sensor parameter.
12. (currently amended) **A method for dynamic sensor placement comprising:**  
**selecting a 3D site model supported in a computer, said 3D site model including**  
**data defining a plurality of surfaces in a scene;**  
**selecting a sensor for placement into said 3D site model; and**  
**rendering said sensor within the scene of said 3D site model in accordance with**  
**sensor parameters associated with said sensor;**

said rendering being performed by said computer for a point of view other than the location of the sensor, and including preparing an image of the scene from said point of view that includes at least part of a coverage area for said sensor, said coverage area being made up of the surfaces or parts of the surfaces that are covered by the sensor as derived in accordance with the 3D site model and the sensor parameters, and also includes a portion of the 3D site model that is not in said coverage area; and

wherein said rendering step renders the coverage area covered by said sensor in accordance with said sensor parameters such that the surfaces in the scene of the 3D model that constitute the coverage area have a texture that differentiates said surfaces from the surfaces in the scene that are not in said coverage area;

said surfaces that constitute the coverage area being oriented in a plurality of three-dimensional orientations in the 3D site model; and

~~The method of claim 7,~~

wherein<sub>2</sub> when one of the surfaces of the 3D site model is positioned so as to be an occlusion between an occluded area that absent the occlusion would be covered by said sensor, said image is rendered so that the occluded area has a texture that differentiates from the coverage area.

13. (canceled)

14. (currently amended) The computer-readable medium according to claim 16 ~~13~~, and further comprising:

selecting a viewpoint for viewing said scene and using said viewpoint in rendering one

of said images.

15. (currently amended) The computer-readable medium according to claim ~~16~~ **13**, wherein said positioning step automatically positions said at least one sensor in the scene of the 3D model in accordance with at least one of a minimization of an occluded area and a maximization of a coverage area.

16. (currently amended) **A computer-readable medium having stored thereon a plurality of instructions, the plurality of instructions including instructions which, when executed by a processor, cause the processor to perform the steps comprising:**

**positioning at least one sensor in a scene of a 3D model, said 3D model including data defining a plurality of surfaces forming objects in the 3D model, said surfaces being each oriented in different three-dimensional orientations and or locations in the scene;**  
**and**

**rendering dynamically images of said sensor in the scene of said 3D site model in accordance with sensor parameters associated with said sensor, wherein said rendering renders an image including a view at least one of the surfaces that has an area covered by said sensor in accordance with said sensor parameters;**

**wherein the images are from one or more viewpoints, none of which are that of the sensor; and**

**wherein in said rendering the area covered by said sensor in accordance with said sensor parameters is rendered such that surfaces in the images of the scene of the 3D model that are covered by the sensor have a texture that differentiates said surfaces from**

surfaces in the rendered images that are not covered by the sensor;

said surfaces in said image being oriented at a plurality of different respective three dimensional orientations; and

~~The computer-readable medium claim 13,~~

wherein, when one of the surfaces of the 3D site model is positioned so as to be an occlusion between an occluded area that absent the occlusion would be covered by said sensor, said image is rendered so that the occluded area has a texture that differentiates from the area covered by said sensor.

17. (canceled)

18. (currently amended) The apparatus of claim ~~19~~ 17, further comprising:

means for changing ~~selecting~~ at least one of ~~said 3D model~~, said sensory parameters or ~~, and~~ one of said viewpoints ~~for viewing said at least one sensor~~.

19. (currently amended) Apparatus for dynamic sensor placement, said apparatus comprising:

means for positioning at least one sensor in a scene of a 3D model; and

means for rendering dynamically images of said sensor within the scene of said 3D site model in accordance with sensor parameters associated with said at least one sensory device and for displaying said images to a user;

wherein the images are from one or more viewpoints none of which are that of the sensor; and

wherein in said rendering the area covered by said sensor in accordance with said sensor parameters is rendered such that surfaces in the image of the scene of the 3D model that are covered by the sensor have a texture that differentiates said surfaces from surfaces in the rendered images that are not covered by the sensor;  
said surfaces in said image being oriented at a plurality of different respective three dimensional orientations; and

~~The apparatus of claim 17,~~

wherein, when one of the surfaces of the 3D site model is positioned so as to be an occlusion between an occluded area that absent the occlusion would be covered by said sensor, said image is rendered so that the occluded area has a texture that differentiates from the coverage area.

20. (canceled)

21. (currently amended) The method of claim ~~24~~ **20**, and further comprising receiving input to said computer and based thereon changing the position data parameters for at least one of said cameras to adjusted position data reflecting an adjusted position of said camera in the 3D site model; and

rendering a second image of the site from the viewpoint that is based on said 3D model and that shows at least a part of a coverage area in said 3D model determined using the adjusted position data for said camera and the viewing parameters thereof; and displaying said second image.

22. (currently amended) The method of claim ~~24~~ **20**, and further comprising  
receiving input to said computer indicative of an adjustment in the viewpoint to a  
second viewpoint; and  
rendering a second image of the site from the second viewpoint based on said 3D model  
and showing at least a part of the coverage area.

23. (canceled)

24. (currently amended) **A method for placing a plurality of surveillance cameras in a  
site, said method comprising:**

**providing on a computer scene data of a 3D model of the site;**

**providing to said computer position data defining discrete positions for each of a  
plurality of cameras in said 3D model, each camera being associated with data defining  
viewing parameters defining coverage thereof;**

**rendering with said computer an image of the site from a viewpoint based on said  
3D model, said image showing at least a part of the coverage of at least one of the cameras  
in said 3D model determined from the position data for said camera and the viewing  
parameters thereof, wherein the coverage is marked in the image with a texture applied to  
surfaces in the 3D model in said coverage, said surfaces being disposed in the 3D site in a  
plurality of different three-dimensional orientations; and**

**displaying said image so as to be viewed by a user;**

**~~The method of claim 20~~**

wherein in said rendering the texture applied to surfaces in the 3D model in each of said



coverages ~~coverage areas~~ is a pattern that indicates resolution of the view thereof by the associated camera.

25. (currently amended) The method of claim ~~24~~ **20** wherein the computer is further provided with sensor position data defining a position of a sensor in said 3D model, and sensor parameters indicative of the coverage thereof, said image being rendered to show at least part of a sensor coverage area defined by said sensor position and said sensor parameters.

26. (currently amended) A method for placing a plurality of surveillance cameras in a site, said method comprising:

providing on a computer scene data of a 3D model of the site;

providing to said computer position data defining discrete positions for each of a plurality of cameras in said 3D model, each camera being associated with data defining viewing parameters defining a coverage area thereof;

rendering with said computer an image of the site from a viewpoint based on said 3D model, said image showing at least a part of the coverage area of at least one of the cameras in said 3D model determined from the position data for said camera and the viewing parameters thereof, wherein the coverage area is marked in the image with a texture applied to surfaces in the 3D model in said coverage, said surfaces being disposed in the 3D site in a plurality of different three-dimensional orientations; and

displaying said image so as to be viewed by a user; and

~~The method of claim 20~~

wherein the rendering of said image includes ray tracing between the viewpoint and a

point on a surface in the 3D model and ray tracing between the point on the surface in the 3D model and each of the cameras,

said point being displayed as in the coverage area when said ray tracings do not encounter any occlusion in the 3D model between said point on said surface and at least one of the cameras, and being displayed as outside the coverage area when there is an occlusion between the point and all of said cameras.

27. (currently amended) The method of claim ~~26~~ **20** wherein the texture is a different shade or coloration of the coverage area relative to other surfaces in said image.

28. (currently amended) **A method for dynamic sensor placement comprising:**

**positioning at least one sensory device in a scene of a 3D site model supported in a computer; and**

**said 3D site model including data defining a plurality of surfaces in three dimensions making up a plurality of objects in the site model;**

**rendering in said computer an image of at least part of said scene of the 3D site model in which at least part of a coverage of said at least one sensory device within the scene of said 3D site model is displayed, and part of the scene of the 3D site model outside said coverage is displayed, said coverage being derived in accordance with sensor parameters associated with said at least one sensory device; and**

**said rendering of said image being derived for a view point in said 3D site model that is different from the positioning of said sensory device; and**

**wherein said rendering step renders the coverage of said sensor in accordance with**

said sensor parameters such that surfaces in the 3D site model in said image have a texture that differentiates the coverage from the part of the scene that is not in said coverage;

said surfaces in said image being disposed in the site model at a plurality of different respective three dimensional orientations; and

~~The method of claim 1~~, wherein the texture of the coverage is a pattern indicative of resolution of the coverage of the sensory device of the surfaces.

29. (currently amended) A method for dynamic sensor placement comprising:

selecting a 3D site model supported in a computer, said 3D site model including data defining a plurality of surfaces in a scene;

selecting a sensor for placement into said 3D site model; and

rendering said sensor within the scene of said 3D site model in accordance with sensor parameters associated with said sensor;

said rendering being performed by said computer for a point of view other than the location of the sensor, and including preparing an image of the scene from said point of view that includes at least part of a coverage area for said sensor, said coverage area being made up of the surfaces or parts of the surfaces that are covered by the sensor as derived in accordance with the 3D site model and the sensor parameters, and also includes a portion of the 3D site model that is not in said coverage area; and

wherein said rendering step renders the coverage area covered by said sensor in accordance with said sensor parameters such that the surfaces in the scene of the 3D model that constitute the coverage area have a texture that differentiates said surfaces

from the surfaces in the scene that are not in said coverage area;

said surfaces that constitute the coverage area being oriented in a plurality of three-dimensional orientations in the 3D site model; and

~~The method of claim 7~~, wherein the texture of the coverage area is a pattern indicative of resolution of the coverage of the sensor on the respective surface.

30. (currently amended) A computer-readable medium having stored thereon a plurality of instructions, the plurality of instructions including instructions which, when executed by a processor, cause the processor to perform the steps comprising:

positioning at least one sensor in a scene of a 3D model, said 3D model including data defining a plurality of surfaces forming objects in the 3D model, said surfaces being each oriented in different three-dimensional orientations and or locations in the scene;  
and

rendering dynamically images of said sensor in the scene of said 3D site model in accordance with sensor parameters associated with said sensor, wherein said rendering renders an image including a view at least one of the surfaces that has an area covered by said sensor in accordance with said sensor parameters;

wherein the images are from one or more viewpoints, none of which are that of the sensor; and

wherein in said rendering the area covered by said sensor in accordance with said sensor parameters is rendered such that surfaces in the images of the scene of the 3D model that are covered by the sensor have a texture that differentiates said surfaces from surfaces in the rendered images that are not covered by the sensor;

said surfaces in said image being oriented at a plurality of different respective three dimensional orientations; and

~~The computer-readable medium of claim 13~~, wherein the texture of the area covered by the sensor is a pattern indicative of resolution of the coverage of the sensor on the respective surface.

31. (currently amended) Apparatus for dynamic sensor placement, said apparatus comprising:

means for positioning at least one sensor in a scene of a 3D model; and

means for rendering dynamically images of said sensor within the scene of said 3D site model in accordance with sensor parameters associated with said at least one sensory device and for displaying said images to a user;

wherein the images are from one or more viewpoints none of which are that of the sensor; and

wherein in said rendering the area covered by said sensor in accordance with said sensor parameters is rendered such that surfaces in the image of the scene of the 3D model that are covered by the sensor have a texture that differentiates said surfaces from surfaces in the rendered images that are not covered by the sensor;

said surfaces in said image being oriented at a plurality of different respective three dimensional orientations; and

~~The apparatus of claim 17~~, wherein the texture of the area covered by the sensor is a pattern indicative of resolution of the coverage of the sensor on the respective surface.

32. (new) The method of claim 6, wherein the sensor parameters correspond to viewing parameters of a camera and a position and an orientation thereof, and said position or orientation of the parameter is modified responsive to input received from a user.

33. (new) The method of claim 32 wherein the texture of the surfaces in the coverage has a pattern indicating a resolution of the camera in surveillance of said surfaces in the coverage.

34. (new) The method of claim 12, wherein the sensor parameters correspond to viewing parameters of a camera and a position and an orientation thereof, and said position or orientation of the parameter is modified responsive to input received from a user

35. (new) The method of claim 34, wherein the texture of the surfaces in the coverage area has a pattern indicating a resolution of the camera in surveillance of said surfaces in the coverage area.

36. (new) The medium of claim 16, wherein the sensor parameters correspond to viewing parameters of a camera and a position and an orientation thereof, and the instructions include instructions causing the processor to modify said position or orientation of the camera responsive to input received from a user.

37. (new) The medium of claim 36, wherein the texture of the surfaces in the coverage area has a pattern indicating a resolution of the camera in surveillance of said surfaces in the area covered by the sensor.

38. (new) The apparatus of claim 19, wherein the sensor parameters correspond to viewing parameters of a camera and a position and an orientation thereof, and

said apparatus further comprising means for modifying said position or orientation of the camera responsive to input received from a user.

39. (new) The apparatus of claim 38, wherein the texture of the surfaces in the coverage area has a pattern indicating a resolution of the camera surveillance of said surfaces in the coverage area.

40. (new) The method of claim 21, wherein when one of the surfaces of the 3D model is positioned between the position of one of the cameras and an occluded surface that would otherwise be in the coverage of said camera, said occluded surface is rendered in said image with a texture that distinguishes the occluded surface from said coverage.

41. (new) The method of claim 26, and further comprising modifying the position of one or more of the cameras in the 3D model responsive to an input from a user, and rendering a further image wherein the coverage area of said camera is derived based on said modified position thereof.

42. (new) The method of claim 41, wherein the texture of the surfaces in at least one of the coverage areas has a pattern indicating a resolution of the associated camera surveillance of said surfaces in the coverage area.

43. (new) The method of claim 28, wherein the sensor parameters correspond to viewing parameters of a camera and a position and an orientation thereof, and said position or orientation of the parameter is modified responsive to input received from a user.

44. (new) The method of claim 29, wherein the sensor parameters correspond to viewing parameters of a camera and a position and an orientation thereof, and said position or orientation of the parameter is modified responsive to input received from a user

45. (new) The medium of claim 30, wherein the sensor parameters correspond to viewing parameters of a camera and a position and an orientation thereof, and the instructions include instructions causing the processor to modify said position or orientation of the camera responsive to input received from a user.

46. (new) The apparatus of claim 31, wherein the sensor parameters correspond to viewing parameters of a camera and a position and an orientation thereof, and  
said apparatus further comprising means for modifying said position or orientation of the camera responsive to input received from a user.